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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,484	03/30/2004	Cezary Dubnicki	02022-B	5531

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NEC Laboratories America, Inc.
4 Independence Way
Princeton, NJ 08540

EXAMINER

TODD, GREGORY G

ART UNIT	PAPER NUMBER
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2157

DATE MAILED: 06/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/813,484

Applicant(s)

DUBNICKI ET AL.

Examiner

Gregory G. Todd

Art Unit

2157

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 03/30/04, 02/01/06
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. This is a first office action in response to application filed, with the above serial number, on 30 March 2004 in which claims 1-20 are presented for examination. Claims 1-20 are therefore pending in the application.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of **50 to 150 words**. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. Applicant is reminded of the proper language and format for the disclosure. Fig. 5-9 should have a description of each chart.

Content of Specification

- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the

Art Unit: 2157

description: 111, 121, 131, 141, 220, 305. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "210" and "110" have both been used to designate physical node. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 recites the limitation "each node" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the hashkeys" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Zhang et al (hereinafter "Zhang", 6,985,928).

As per Claim 1, Zhang teaches a method for improving utilization in a peer-to-peer network, the method comprising:

allocating one or more storage slots at each node in the peer-to-peer network, a first portion of the storage slots allocated for storage zones and any remaining storage

Art Unit: 2157

slots at each node allocated as a free slot reserve (at least col. 2, lines 27-42; col. 3 line 47 – col. 4 line 54; p2p system consisting of nodes being in storage zones);

inserting data into the storage zones (at least col. 3, lines 55-67; objects stored in zones); and

when a storage zone reaches its full capacity, splitting the data in the storage zone into a first and second portion, allocating a free slot reserve storage slot as a new storage zone, and transferring the second portion of the data to the new storage zone (at least col. 3 line 47 - col. 4 line 54; parent zone split into two subzones, zones being crowded placing object in other subzone).

As per Claim 2. The method of claim 1 wherein each node is allocated more storage slots than its actual physical capacity (at least col. 4 line 39 – col. 5 line 34; storage utilization).

As per Claim 3. The method of claim 2 wherein each node is allocated $N-1$ virtual slots for each N storage slots allocated (at least col. 3 line 47 - col. 4 line 54).

As per Claim 4. The method of claim 2 wherein a storage zone at a node is transferred to another node in the peer-to-peer network if the data inserted into the storage zones at the node fills the actual physical capacity of the node (at least col. 4 line 39 – col. 5 line 56; storage utilization).

As per Claim 5. The method of claim 4 where a local search for candidate nodes in a transfer set is conducted prior to transfer of the storage zone (at least col. 4 line 39 – col. 5 line 34; subzone having least # of nodes).

As per Claim 6. The method of claim 1 wherein the new storage zone is transferred to a free slot reserve on a different node when the storage zones hosted at the node exceeds the slots allocated at the node (at least col. 4 line 39 – col. 5 line 34; node in available subzone).

As per Claim 7. The method of claim 6 where a local search for candidate nodes in a transfer set is conducted prior to transfer of the new storage zone at least col. 4 line 39 – col. 5 line 34).

As per Claim 8. The method of claim 1 wherein the data is associated with hashkeys of a hash function and where each storage zone is responsible for a subset of all hashkeys (at least col. 2, lines 52-60; DHS).

As per Claim 9. The method of claim 7 wherein the hashkeys are uniformly distributed by the hash function (at least col. 2, lines 52-60; DHS).

As per Claim 10. The method of claim 1 wherein the storage slots are of a fixed-size (at least col. 3, lines 55-67; one size for parent zone).

As per Claim 11, Zhang teaches a method for improving utilization in a peer-to-peer network, the method comprising:

allocating one or more storage slots at each node in the peer-to-peer network, a first portion of the storage slots allocated for storage zones and any remaining storage slots at each node allocated as a free slot reserve (at least col. 2, lines 27-42; col. 3 line 47 – col. 4 line 54; p2p system consisting of nodes being in storage zones); and

when a new node is added to the peer-to-peer network, transferring at least one storage zone from another node in the peer-to-peer network to the new node so as to maintain at least one storage slot at each node in the peer-to-peer network (at least col. 3 line 47 - col. 4 line 54).

As per Claim 12. The method of claim 11 wherein the storage zone at the another node is eagerly split into a first and second portion with the second portion transferred to the new storage zone at the new node (at least col. 3 line 47 - col. 4 line 54; parent zone split into two subzones, zones being crowded placing object in other subzone).

As per Claim 13. The method of claim 12 wherein each node maintains no more than one eagerly split zone (at least col. 3 line 47 - col. 4 line 54; parent zone).

As per Claim 14. The method of claim 11 wherein the another node has two or more storage zones and one of these storage zones is transferred to the new node to become the new storage zone on the new node (at least col. 3 line 47 - col. 4 line 54; parent zone split into two subzones, zones being crowded placing object in other subzone).

Art Unit: 2157

As per Claim 15. The method of claim 11 wherein a search is conducted among a local set of nodes in the peer-to-peer network for a storage zone to transfer to the new node (at least col. 4 line 39 – col. 5 line 34; subzone having least # of nodes).

As per Claim 16, Zhang teaches a node for a peer-to-peer network, the node maintaining a number of slots for storage of objects in the peer-to-peer network where the number of slots exceeds the node's actual physical capacity (at least col. 4 line 39 – col. 5 line 34; storage utilization).

As per Claim 17. The node of claim 16 where the number of slots maintained by the node is equal to 2 times $N-1$ where N is a number of slots that would fill the node's actual physical capacity (at least col. 3 line 47 - col. 4 line 54).

As per Claim 18. The node of claim 16 where the objects stored in a slot at the node are transferred to another node in the peer-to-peer network if the objects inserted into the slots at the node fills the actual physical capacity of the node (at least col. 3 line 47 - col. 4 line 54; zones being crowded placing object in other subzone).

As per Claim 19. The node of claim 16 wherein the objects are associated with hashkeys of a hash function and where each node is responsible for a subset of all hashkeys (at least col. 2, lines 52-60; DHS).

As per Claim 20. The node of claim 16 wherein the slots are of a fixed-size (at least col. 3, lines 55-67; one size for parent zone).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Moulton et al, Franzenburg, Tormasov et al, and Hensley et al are cited for disclosing pertinent information related to the claimed invention. Applicants are requested to consider the prior art reference for relevant teachings when responding to this office action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory G. Todd whose telephone number is (571)272-4011. The examiner can normally be reached on Monday - Friday 9:00am-6:00pm w/ first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571)272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2157

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Todd



Patent Examiner

Technology Center 2100



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